

EXHIBIT A

Paper No. ____

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

SINGULAR COMPUTING LLC,
Patent Owner.

Case No. IPR2021-00179
Patent No. 8,407,273

**PETITION FOR INTER PARTES REVIEW
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.1 et seq.**

APPENDIX LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 8,407,273
1002	Prosecution History of U.S. Patent No. 8,047,273
1003	Declaration of Richard Goodin
1004	Curriculum Vitae of Richard Goodin
1005	U.S. Patent Appl. 12/816, 201 (“201 Application”)
1006	U.S. Patent Appl. Publ. No. 2010/0325186 A1 (“Bates-2010”)
1007	U.S. Patent App. Publ. No. 2007/0203967 (“Dockser”)
1008	Tong et. al, <i>Reducing Power by Optimizing the Necessary Precision/Range of Floating-Point Arithmetic</i> , IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Vol. 8, No. 3, June 2000 (“Tong”) (from pages 6-19 of the Declaration of Gerard P. Grenier, Ex. 1025).
1009	U.S. Patent No. 5,689,677 (“MacMillan”)
1010	U.S. Patent Appl. Publ. No. 2007/0266071 (“Dockser-Lall”)
1011	U.S. Patent No. 6,065,209 (“Weiss”)
1012	Gaffar et. al, <i>Unifying Bit-width Optimization for Fixed-Point and Floating-Point Designs</i> , 12 th Annual IEEE Symposium on Field-Programmable Custom Computing Machines, April 20-23, 2004 (“Gaffar”) (from pages 22-31 of the Declaration of Gerard P. Grenier, Ex. 1028)
1013	European Patent Appl. Publ. No. 0 632 369 A1 (“Hekstra”)
1014	U.S. Patent No. 5,375,084 (“Begun”)
1015	U.S. Patent No. 4,933,895 (“Grinberg”)
1016	U.S. Patent No. 5,442,577 (“Cohen”)
1017	U.S. Patent Appl. Publ. No. 2003/0028759 (“Prabhu”)
1018	U.S. Patent No. 5,790,834 (“Dreyer”)
1019	U.S. Patent Appl. Publ. No. 2009/0066164 (“Flynn”)
1020	U.S. Patent No. 5,666,071 (“Hawkins”)
1021	A Matter of Size: Triennial Review of the National Nanotechnology Initiative (National Academies Press 2006), pages 15-44, 99-109
1022	Transcript of YouTube video on Practical Approximate Computing at University of California, Berkeley, March 2016 (“Bates transcript”), video available at https://www.youtube.com/watch?v=aHkWX3QctkM (last accessed Sep. 16, 2020)
1023	U.S. Patent No. 6,311,282 (“Nelson”)
1024	U.S. Patent No. 4,583,222 (“Fossum”)

typical and obvious implementation of Dockser’s “conventional processor.”

[0035]; Goodin, ¶ 319; Ex. 1023, 1:16-48.

Dockser’s main processor is “adapted to control the operation of” Dockser’s execution unit as claim 24 recites, by specifying its precision level by writing “subprecision select bits” to the FPP’s “*control* register.” [0018], [0025]; Goodin, ¶ 320.

H. Claim 26

Dockser’s computer system and ASIC are “part of a mobile device” as claimed—*e.g.*, “wireless telephone[],... (PDA),... pager[],...[etc.]” [0003]; Goodin, ¶ 321.

I. Claim 28

Dockser’s execution unit “represents numbers using a floating point representation” as claim 28 recites. *Supra* §§ V.A-V.B; Goodin, ¶ 322.

VI. **GROUND 2: CLAIMS 1-2, 21-24, 26, 28, AND 32-33 WOULD HAVE BEEN OBVIOUS OVER DOCKSER AND TONG**

A. Tong

Tong (Ex. 1008) is Section 102(b) prior art because it was publicly accessible by June 30, 2000. Tong’s face bears a 2000 copyright date and indicates it was published by the IEEE, a “well-known, reputable compiler and publisher of scientific and technical publications,” in *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, Vol. 8, No. 3, June 2000. *Ericsson v.*